



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,354	12/05/2003	Bjorn Hansson	9342-139	8255

20792 7590 02/01/2006

MYERS BIGEL SIBLEY & SAJOVEC
PO BOX 37428
RALEIGH, NC 27627

EXAMINER

D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
----------	--------------

2683

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,354

Applicant(s)

HANSSON ET AL.

Examiner

Stephen M. D'Agosta

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 21-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-13 and 31-34 is/are allowed.
- 6) ☒ Claim(s) 1-4, 21-23, 30 and 38-40 and 42 is/are rejected.
- 7) ☒ Claim(s) 5-8, 24-29, 36-37, 43-45 is/are objected to.
- 8) ☒ Claim(s) 14-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 1-11-2006 have been fully considered but they are not persuasive. ***Claims 31-34 are allowed.***

1. The applicant's first arguments focus on Zhao and that he teaches compressed GPS messages. First and foremost, one skilled understands that GPS messages are known in the art which transmit data (eg. time) to the user. Just because Zhao focuses on sending a compressed message does not preclude his system from supporting "regular" uncompressed messages. The examiner is not swayed.

2. With respect to Zhao's disclosure of "Distance", while it may be "short", it nonetheless is disclosed and may be included. Hence, Zhao's disclosure is all that is needed to reject the claim. Secondly, the examiner merely used this passage to show that Zhao intimates that he has considered distance. Dussell and McClennon discuss it more at length.

3. The applicant argues that Dussell and McClennon do not remedy the failings of Zhao. The examiner disagrees since the "concepts" put forth by Dussell and McClennon read on the applicant's broad claim language. The applicant provides little details as to how, why or when, only to disparage the teachings of the prior art.

4. The arguments use the term "as understood by the applicant". This term appears to be used to show how the applicant is interpreting the art. It would be better for the applicant to amend their broadly written claims such that they do not have to "interpret", but rather can specifically point to factual differences.

5. The applicant argues that a prima facie case has not been established. The examiner disagrees since he has shown specific columns/lines where the prior art teachings read on the art and reason(s) to combine. The motivation statement is not "a conclusion" as argued, but reflects that one can use time to show if/when a delay occurred. Zhao and Dussell teach time-based operations whereas McClennon specifically teaches estimating roundtrip delay, which would be used to correct any timing issues with Zhao and Dussell. The rejection is upheld.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 21-22, 31-34 and 38-42 rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al. US 6,429,811 and further in view of Dussell et al. US 5,938,721 and McClennon et al. US 6,324,170.

As per **claims 1, 21, 31 and 39**, Zhao teaches a method/server of providing Global Positioning System (GPS) time assistance to a mobile station (title, abstract) comprising:

transmitting a message from a networked GPS time server to a mobile station, the message including GPS referenced time information (C4, L52 to C5, L5 teaches GPS receiver generating GPS assistance messages); and

transmitting the message to the mobile station (C4, L57-63 teaches the GPS receiver, figure 2, #260, sending messages to the mobile device),

but is silent on indicating an elapsed GPS referenced time interval at the networked GPS time server between receiving a request for GPS time assistance at the networked GPS time server.

Zhao does teach correcting for clock inconsistencies (C5, L28-24) as well as correcting for the time it takes for messages to travel to/from mobile/GPS receiver (C8, L23-41 which discloses accounting for the distance between mobile and GPS receiver, "...the separation distance D between the BTS and mobile is very short" and "...the calculated maximum error in the measured range based on the10km separation distance D..."). Hence, Zhao will correct for any elapsed time it takes a message to travel between the mobile and GPS reference station (eg. for a request and/or an assistance message).

Dussell teaches a GPS request message from a mobile device to a GPS server "Second, the GPS data can be provided at a central server, and any device (such as mobile computer system 20) requiring such data can address a data request to the GPS server. The server then packages the requested data in a packet, frame or other suitable format and sends the packaged data directly to the requesting device" (C5, L53-67)

Further, McClennon teaches an echo controller that compensates for variable delay (title) whereby an estimation is made of the roundtrip delay (RTD) whereby timestamps can be used in packet data communications using ICMP messages (abstract and C2, L4-15).

Art Unit: 2683

The examiner notes that mobile devices with IP connectivity are well known and therefore ICMP would be supported on these devices as well.

With further regard to claim 41, Zhao but is silent on wherein the GPS referenced time information comprises a first GPS referenced time at which the networked GPS time server received the request and a second GPS referenced time at which the networked GPS time server transmitted the message.

Zhao does teach correcting for clock inconsistencies (C5, L28-24) as well as correcting for the time it takes for messages to travel to/from mobile/GPS receiver (C8, L23-41 which discloses accounting for the distance between mobile and GPS receiver, "...the separation distance D between the BTS and mobile is very short" and "...the calculated maximum error in the measured range based on the10km separation distance D..."). Hence, Zhao will correct for any elapsed time it takes a message to travel between the mobile and GPS reference station (eg. for a request and/or an assistance message).

McClennon teaches an echo controller that compensates for variable delay (title) whereby an estimation is made of the roundtrip delay (RTD) whereby timestamps can be used in packet data communications using ICMP messages (abstract and C2, L4-15).

It would have been obvious to one skilled in the art at the time of the invention to modify Zhao, such that indicating an elapsed GPS referenced time interval at the networked GPS time server between receiving a request for GPS time assistance at the networked GPS time server OR such that the GPS referenced time information comprises a first GPS referenced time at which the networked GPS time server received the request and a second GPS referenced time at which the networked GPS time server transmitted the message, to provide means for the mobile to subtract out the elapsed time for roundtrip transmission and reception of the request and subsequent data OR to provide means for subtracting out the elapsed time for the transmission of the request sent and the data received.

As per **claims 2, 22 and 40**, Zhao teaches claim 1/21/39 **but is silent on** wherein the message comprises an Internet Control Message Protocol message.

McClennon teaches an echo controller that compensates for variable delay (title) whereby an estimation is made of the roundtrip delay (RTD) whereby timestamps can be used in packet data communications using ICMP messages (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Zhao, such that the message comprises an Internet Control Message Protocol message, to provide support for industry standard protocols and their messages.

As per **claims 3 and 44**, Zhao teaches claim 1/39 **but is silent on** wherein the GPS referenced time information comprises a first GPS referenced time at which the networked GPS time server received the request and a second GPS referenced time at which the networked GPS time server transmitted the message.

Zhao does teach correcting for clock inconsistencies (C5, L28-24) as well as correcting for the time it takes for messages to travel to/from mobile/GPS receiver (C8,

Art Unit: 2683

L23-41 which discloses accounting for the distance between mobile and GPS receiver, "...the separation distance D between the BTS and mobile is very short" and "...the calculated maximum error in the measured range based on the10km separation distance D..."). Hence, Zhao will correct for any elapsed time it takes a message to travel between the mobile and GPS reference station (eg. for a request and/or an assistance message).

McClennon teaches an echo controller that compensates for variable delay (title) whereby an estimation is made of the roundtrip delay (RTD) whereby timestamps can be used in packet data communications using ICMP messages (abstract and C2, L4-15).

It would have been obvious to one skilled in the art at the time of the invention to modify Zhao, such that the GPS referenced time information comprises a first GPS referenced time at which the networked GPS time server received the request and a second GPS referenced time at which the networked GPS time server transmitted the message, to provide means for subtracting out the elapsed time for the transmission of the request sent and the data received.

As per **claim 4**, Zhao teaches claim 3 **but is silent on** wherein the GPS referenced time information further comprises: a mobile station referenced request time at which the mobile station transmitted the request to the networked GPS time server.

McClennon teaches an echo controller that compensates for variable delay (title) whereby an estimation is made of the roundtrip delay (RTD) whereby timestamps can be used in packet data communications using ICMP messages (abstract and C2, L4-15). The examiner notes that in order for the RTD to be calculated, McClennon needs to know when the message was sent, received at an interim location and then sent back to the sender.

It would have been obvious to one skilled in the art at the time of the invention to modify Zhao, such that the GPS referenced time information further comprises: a mobile station referenced request time at which the mobile station transmitted the request to the networked GPS time server, to provide means for knowing when the mobile transmitted the message to subtract out elapsed transmission times for request/data messages.

As per **claim 42**, Zhao teaches claim 39 and a computer-readable medium having computer-executable instructions for performing the steps (figure 2, #260 is the GPS receiver which processes and generates GPS time assistance information and inherently requires a processor and software/instructions to perform said processing).

As per **claim 38**, Zhao teaches claim 31 and a computer-readable medium having computer-executable instructions for implementing the networked server (figure 2, #260 is the GPS receiver which processes and generates GPS time assistance information and inherently requires a processor and software/instructions to perform said processing).

Art Unit: 2683

Claims 23 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao/Dussel/McClennon and further in view of Postel, ICMP Protocol Specification, dated 1981.

As per **claim 23**, Zhao teaches claim 21 **but is silent on** wherein the request for GPS time assistance comprises an ICMP time request message and the message comprises an ICMP time response message.

McClennon teaches an echo controller that compensates for variable delay (title) whereby an estimation is made of the roundtrip delay (RTD) whereby timestamps can be used in packet data communications using ICMP messages (abstract and C2, L4-15). The examiner notes that in order for the RTD to be calculated, McClennon needs to know when the message was sent, received at an interim location and then sent back to the sender.

Postel teaches time-related messages such as Timestamp and Timestamp Reply, which reads on the claim (on the printed document, see page 11).

It would have been obvious to one skilled in the art at the time of the invention to modify Zhao, such that the request for GPS time assistance comprises an ICMP time request message and the message comprises an ICMP time response message, to provide means for "time-stamping" messages and/or having the capability to know when a message was sent and received.

As per **claim 30**, Zhao teaches claim 22 **but is silent on** wherein the ICMP message comprises a PING message.

McClennon teaches an echo controller that compensates for variable delay (title) whereby an estimation is made of the roundtrip delay (RTD) whereby timestamps can be used in packet data communications using ICMP messages (abstract and C2, L4-15). The examiner notes that in order for the RTD to be calculated, McClennon needs to know when the message was sent, received at an interim location and then sent back to the sender.

Postel teaches several different messages including the Echo and Echo reply. The PING message is a well known message supported in wired/wireless networks and provide means to determine if a route/device is available.

It would have been obvious to one skilled in the art at the time of the invention to modify Zhao, such that the ICMP message comprises a PING message, to provide support for well known industry standard protocols, messages and functions.

Allowable Subject Matter

1. **Claims 9-13 and 31-34 are allowed**. The prior art of record, alone or in combination, fails to disclose these concepts.

2. **Claims 5-8, 24-29, 35 36-37 and 43-45** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As per **claim 5**, the prior art of record fails to disclose “wherein the message comprises a single ICMP message including the first and second GPS referenced times and the mobile station request time”.

As per **claim 6**, the prior art of record fails to disclose “receiving the message at the mobile station at a mobile station referenced reception time at which the mobile station received the message from the networked GPS time server; determining a delay associated with propagation of the message from the networked GPS time server to the mobile station based on the mobile station referenced reception time and the mobile station referenced request time; and determining a mobile station GPS time based on the second GPS referenced time at which the networked GPS time server transmitted the message and the delay”.

As per **claim 7** – depends from claim 6.

As per **claim 8**, the prior art of record fails to disclose “transmitting is preceded by: accessing GPS referenced time from the networked GPS time server responsive to the request to provide a first GPS referenced time at the networked GPS time server when the message is received; and accessing GPS referenced time from the networked GPS time server responsive to the request to provide a second GPS referenced time at the networked GPS time server when the message is transmitted”.

As per **claim 24**, the prior art of record fails to disclose “wherein GPS referenced time information comprises GPS Time-Of-Week (TOW) information and GPS sub-frame information indicating GPS time having a greater accuracy than the GPS TOW information alone”.

As per **claim 25**, the prior art of record fails to disclose “wherein the GPS referenced time information further comprises: GPS data bit count information indicating a bit position within the GPS sub-frame information indicating GPS time having a greater accuracy than the GPS TOW information and the GPS sub-frame information alone”.

As per **claim 26**, the prior art of record fails to disclose “wherein the GPS referenced time information further comprises: coarse acquisition code information indicating a coarse acquisition code repetition count within the GPS data bit count information indicating GPS time having a greater accuracy than the GPS TOW information, the GPS sub-frame information, and the GPS data bit count information alone”.

Art Unit: 2683

As per **claim 27**, the prior art of record fails to disclose “wherein the GPS referenced time information comprises: GPS Time-Of-Week (TOW) information; and four bits of GPS sub-frame information indicating a word position within a frame of the GPS TOW information; five bits of GPS data bit count information indicating a bit position within the GPS sub-frame information; and coarse acquisition code information indicating a coarse acquisition code repetition count within the GPS data bit count information”.

As per **claim 28**, the prior art of record fails to disclose “wherein the GPS TOW information is separated into at least two ICMP messages, or excludes at least some of the most significant bits of the GPS TOW information”.

As per **claim 29**, the prior art of record fails to disclose “wherein the coarse acquisition code information comprises between one and five bits inclusive”.

As per **claim 36**, the prior art of record fails to disclose “wherein the GPS referenced time information further comprises: GPS data bit count information indicating a bit position within the GPS sub-frame information indicating GPS time having a greater accuracy than the GPS TOW information and the GPS sub-frame information alone”.

As per **claim 37**, the prior art of record fails to disclose “wherein the GPS referenced time information further comprises: coarse acquisition code information indicating a coarse acquisition code repetition count within the GPS data bit count information indicating GPS time having a greater accuracy than the GPS TOW information, the GPS sub-frame information, and the GPS data bit count information alone”.

As per **claim 43**, the prior art of record fails to disclose “wherein the GPS referenced time information comprises GPS Time-Of-Week (TOW) information and GPS sub-frame information indicating GPS time having a greater accuracy than the GPS TOW information alone”.

As per **claim 44**, the prior art of record fails to disclose “wherein the GPS referenced time information further comprises: GPS data bit count information indicating a bit position within the GPS sub-frame information indicating GPS time having a greater accuracy than the GPS TOW information and the GPS sub-frame information alone”.

As per **claim 45**, the prior art of record fails to disclose “wherein the GPS referenced time information further comprises: coarse acquisition code information indicating a coarse acquisition code repetition count within the GPS data bit count information indicating GPS time having a greater accuracy than the GPS TOW information, the GPS sub-frame information, and the GPS data bit count information alone”.

Conclusion

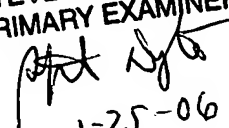
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

STEVE M. D'AGOSTA
PRIMARY EXAMINER

1-25-06